RACM ANALYSIS FOR WISCONSIN'S SEVERE AREA DESIGNATED NONATTAIMENT FOR 1-HR OZONE NAAQS

This paper provides supplemental information for EPA's notice of proposed rulemaking for State implementation plans (SIP) for the Wisconsin area designated severe non attainment for the 1-hour national ambient air quality standard (NAAQS) for ground-level ozone

Wisconsin has performed an analysis to evaluate emission levels of oxides of nitrogen (NOx) and volatile organic compounds (VOC) and their relationships to the application of current and anticipated control measures. We have concluded that additional control measures for stationary and mobile sources are not economically feasible and would not advance the 1 – hour ozone standard attainment year of 2007.

Section 172{c}(1) of the Clean Air Act (CAA) requires the SIP to contain reasonably available control measures (RACM) as necessary to provide for attainment as expeditiously as practicable. During the comment period for the proposed EPA actions on SIPs to implement the 1 – hour Ozone National Ambient Air Quality Standards, (NAAQS), several commenters stated that there is no evidence that the severe ozone attainment demonstrations have adopted all RACM. Further, Robert E. Yuhnke stated that the mobile source emission budgets (MVEBs) in the SIPs are inadequate by definition because the SIPs do not demonstrate timely attainment or contain the emission reductions required for all RACM. In addition, some commenters stated that for all potential RACM measures not adopted into the SIP, the State must provide a justification for why they were determined not to be RACM.

In December 1999, USEPA proposed action on Wisconsin's interim 1 – hour attainment demonstration SIP along with 14 other states for 10 serious and severe 1 – hour ozone nonattainment areas. Under the terms of a recent consent decree, EPA is obligated to propose by October 15, 2001 and promulgate by June 14, 2002 attainment demonstration Federal Implementation Plans (FIPs) if EPA has not fully approved final attainment demonstration SIPs by the relevant dates. In accordance with this schedule, and to facilitate expeditious EPA approval, Wisconsin understands that the docket should be supplemented no later than June 29, 2001.

The following analysis, based on commonly used standards of cost-effectiveness, demonstrates that a number of possible emission control measures have been evaluated for their emission reductions. It further demonstrates that the measures evaluated either (a) are likely to require an intensive and costly effort for numerous small area sources, or (b) do not advance the attainment dates for Wisconsin, and therefore would not be considered RACM.

GENERAL RACM ASSESSMENT

Wisconsin has developed and implemented timely and effective VOC control strategies for the nonattainment areas that meet the Clean Air Act's (CAA) rate of progress requirements specified for the severity of the respective nonattainment areas. These plans, including the current attainment demonstration submittal, have included enforceable mechanisms that have significantly reduced the local level of anthropogenic VOC emissions. These aggregate 48% creditable reductions over the 1990-2007 period already include all reasonably available control measures.

Wisconsin has promulgated VOC RACT for all major sources in the area designated non-attainment for the 1-hour ozone standard. To ensure a regional application of RACM, the state has actively engaged in both the LADCO, (Lake Michigan Air Directors Consortium) and OTAG, (Ozone Transport Assessment Group) processes to ensure that regional background NOx emissions that impact the Lake Michigan ozone air quality are controlled.

The nonattainment areas of WI, IL and IN have obtained well-supported waivers from EPA regarding NOx control requirements – specifically NOx RACT, NOx New Source Review, and NOx vehicle inspection/maintenance. As part of this attainment demonstration and the 2002-2007 rate-of-progress analyses, WI evaluated which NOx control measures might prove beneficial to timely ozone attainment in the region. WI found that selective NOx limitations on some of the major point sources, NOx I/M cutpoints for pre OBD2 vehicles, and tightened emission limits for many new NOx sources would prove beneficial. This selective adjustment of the NOx waiver was modeled as part of the SIP demonstration and showed a positive impact.

NOx NSR and NOx RACT continue to be excess to a control level needed to either meet rate-of-progress or to help advance regional attainment of the 1- hour standard. More rapid attainment depends primarily on the speed of the vehicle and off-road equipment fleet transition to newer technology and on the speed of the regional NOx controls on large point sources associated with the NOx SIP call. Since EPA previously approved the NOx waiver for the areas and has successfully litigated a challenge to the waivers, WI feels that no further stationary source control measures, besides those included in this demonstration, can impact the state's attainment status for the years 2002-2006. Beyond that time, the state has shown that the fully-implemented NOx SIP calls, combined with all the prior VOC controls will lead to attainment.

The photochemical modeling analysis accompanying this attainment demonstration shows that ozone concentrations in the Lake Michigan Region stem from local, regional and extra-regional emissions. Since, NOx and VOC emissions in Wisconsin represent only a small portion of regional emissions and since Wisconsin has already implemented emission control programs commensurate with its severe nonattainment designation, there are no reasonable control measures available to the state that will accelerate attainment of the standard.

The general assessment conclusion for RACM is that the state has pursued all reasonable controls for both stationary and area sources, including RACT for VOC. In addition, the NOx limits developed through this SIP to address rate-of-progress go beyond the approved NOx RACT programs for many nonattainment areas not covered by a NOx waiver. Finally, the state has adopted a series of new source NOx emission limits that are much tighter than the current NSPS and affect sources substantially smaller than covered by PSD in order to close new equipment emission control loopholes potentially created by the NOx waiver. New sources of VOCs are subject to the NSR and PSD programs and the offset level is the strictest applied outside of extreme ozone areas.

MOBILE SOURCE ANALYSIS

As part of Southeast Wisconsin's severe ozone status, the state has faithfully implemented the enhanced I/M and clean fleet program requirements to reduce mobile sector emissions. The area is also subject to reformulated gasoline requirements and has to show no growth in emissions based on growth in VMT for a ten-year period after the attainment demonstration.

During the Phase III Ozone Attainment SIP planning process the Mobile Sector component was divided into two tracks, one devised to investigate fuels, speed controls and Inspection/Maintenance (I/M), the other to review Transportation Demand Management (TDM), Transportation Control Measures (TCM) and Land Use. Refined evaluation revealed that the use of NOx cutpoints for pre-OBD-2 vehicles in the I/M program would prove beneficial. This selective adjustment of the NOx waiver was modeled as part of the SIP demonstration and showed a positive impact.

The 1996 Regional Travel Demand Strategy was intended to be used as a resource by the Wisconsin Department of Natural Resources and the Wisconsin Department of Transportation and as a blueprint for actions considered for implementation in southeastern Wisconsin in place of the Employee Commute Options program (ECO). Actions included in the Regional TDM Strategy were selected based on their implementation feasibility.

The 1996 Regional Travel Demand Strategy served as the basis for further evaluations. Updated emission estimates from MOBILE 5A were included in the attached table, which represents a series of strategies that were reviewed based on each action's cost and benefit, including expected changes in vehicle miles traveled (VMT), vehicle trips, ridership, and VOC and NOx emissions.

Conclusion:

The emissions and congestion/VMT reduction potential of TDM actions that are most feasible in southeastern Wisconsin are very small. The total VOC and NOx emission reduction potential of the Regional TDM strategy, for 2007, is estimated to be .26 ton/hot summer weekday VOC and .46 ton/hot summer weekday NOx reduction.

Elements of the Southeastern Regional Planning Commission, (SEWRPC) Regional Transportation Plan are potentially a major component of the Regional TDM effort. However, a serious legislative effort would be necessary to secure funding for these strategies. New funding and support activities would be necessary to ensure action implementation and participation on even a mid-term basis much less to meet the short term ROP objective. These potential reductions are far less than the emissions reductions needed within the nonattainment area to achieve attainment. Based on this analysis, DNR concluded that these measures would either (a) likely require an intensive and costly effort for numerous small area sources, or (b) not advance the attainment date in the nonattainment area. Cheaper and more rapidly effective strategies were therefore selected for further plan development efforts.

BACKGROUND FOR LONG RANGE TRANSPORTATION DEMAND MANAGEMENT

The Clean Air Act Amendments of 1990 (CAAA) require severe ozone nonattainment areas to evaluate and consider TCMs for SIP inclusion that might be needed to meet attainment requirements. Section 108(f), of the CAAA provides a comprehensive list of 16 TCMs Wisconsin should consider in its evaluation. The requirement also specified that mobile source emissions could not show an increase before the 2007 attainment date for southeastern Wisconsin. If the estimate indicated that there would be an increase in sector emissions, a nonattainment area was required to implement additional TCMs or other technology-based mobile source control activities to ensure that an increase in mobile source emissions would not take place prior to attainment – presumably through 2007 at the earliest.

A Technical Committee was directed to evaluate TCMs as part of a working dialogue between the Department and transportation stakeholders regarding support for an "uncertainty factor" [the 7 ½% growth increment] ultimately approved by the Board for inclusion in the Phase 3 MVEB. The committee consists of representatives of the Department of Natural Resources (WDNR), Department of Transportation (WisDOT), Southeastern Wisconsin Regional Planning Commission (SEWRPC) and Citizens for a Better Environment (CBE). Its first charge was to evaluate potential TCMs for consideration by a broader conformity work group. The dialogue identified criteria for evaluating future TCMs including: trip and/or VMT reduction; NOx and/or VOC emission reduction over a specified period; cost per ton reduced (e.g. capital costs, operating/maintenance costs, equivalent annual costs); implementation timeline; and feasibility (e.g. administrative costs, funding, political/public acceptance issues). Based

on these criteria and any others agreed upon by the technical committee, a full list of potential TCMs was evaluated for their effectiveness and feasibility.

The working agreements noted that these evaluations would be submitted to the parent conformity work group for its selection of those most appropriate for implementation in support of further ozone SIP or non-ozone SIP air quality improvement effort based on limiting motor vehicle emissions. The Department staff, CBE and additional environmental stakeholders supported the mobile sector "uncertainty factor" conformity agreement and the exclusion of major transit capital and land use policies from the SIP *contingent on* a common and equal commitment to working within a parallel process regarding these policies on the part of the conformity group and major parties represented there.

In a separate evaluation during the motor vehicle control strategies and SIP emissions budget deliberations, CBE, an environmental stakeholder to the clean air planning process in southeast Wisconsin, identified several long-term strategies in the discussion paper entitled *Evaluation/Use of Transportation Control Measures (TCMs) to Reduce Emissions* as potential TCM approaches for reducing mobile sector emissions. Although the implementation of a TDM strategy based on meeting 2007 Ozone SIP needs is not feasible at this time, the workgroup intends to look further into general TDM strategies and support research to assess their possible use in southeastern Wisconsin.